

Nitrite Based Corrosion Inhibitors (NOT suitable for open air systems)

Sodium Nitrite based corrosion inhibitors, when used in open surface air-to-liquid contact such as the tank of a CNC Plasma Arc Water Table, will oxidise the nitrite, causing it to change into a nitrate form. It has now become a corrosive sodium nitrate liquid that destructively assaults the metals it comes in contact with, including steel, aluminum, copper, and bronze. Sodium nitrate is a known carcinogen and biohazard (CAS 7632-00-0).

Acute Health effects: Irritating to eyes, skin, and respiratory tract. Toxic by inhalation and mouth.

Sodium nitrites also have obvious temperature limitations when used in Plasma Arc Cutting water tables. Testing in sodium nitrite cutting water tables has shown abnormally high sodium content in relation to the nitrite. The nitrite is changing into nitrate due to excessive air absorption and thermal breakdown by the plasma arc torch heat. This heat causes gassing-off of the Nitrite/Nitrate with resultant toxic fumes, and the Sodium remains. The result is increased corrosivity in the tank. If the Plasma Arc Operator adds more Sodium Nitrite to alleviate this corrosion problem, he will in fact worsen the condition substantially.

Sodium Nitrite is an active nutrient for bacteria resulting in a high demand for formaldehyde containing biocides, which has a very negative environmental impact, causing severe health problems including cancer, respiratory and visual. Disposal of sodium nitrites in any concentration causes serious environmental issues, so call HazMat.

Proprietary nitrite based corrosion inhibitors; supplied by: Chemical Methods Inc. as CM-1000-G, or Koal Industries as Plasma Quench 617, and various homemade recipes, usually consist of an aqueous solution of sodium nitrite, a pH buffer, and a biocide (formaldehyde).

Because of its high concentration in the reservoir with the resultant high Total Dispersed Solids, (TDS) sodium nitrites cause extra wear on pump & valve seals.

Note: Nitrite based corrosion inhibitors may provide corrosion protection by a protective barrier film that is formed by a chemical reaction between nitrite and iron or aluminum only. This works fine in a closed system like a train locomotive radiator as long as there is very little air entry into the reservoir (the hazardous issues remain).

GREENCUT[®] CUTTING/MISTING FLUID does NOT contain nitrites, or any biocides or pesticides for bacterial control in its formula. GreenCut is totally SAFE for humans, animals, fish, land, air, and water. GreenCut is proven and certified under the international EcoLogo/UL seal.

Originally Approved by:



Environment
Canada

under the Environmental Choice Program

GreenCut eliminates the food source for all bacterium in the metalworking fluid reservoir by instant biodegradation of any oils dripping into the reservoir. The tramp oils are immediately biodegraded to carbon dioxide and water, providing a totally safe environment while eradicating all sump odors.

GreenCut[®] Cutting Fluid will improve machining operations of all metals and alloys by at least 40%, when used at a mix ratio of 1:20 with tap water. GreenCut contains superior metal-cutting chemistry together with anti-rust and anti-foam additives, all of which is SAFE and 100% effective. Used GreenCut Cutting Fluid is approved for direct sewage disposal after waste metals removal.